

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Final Office Action dated November 12, 2008 has been received and its contents carefully reviewed.

Claims 11 and 12 are hereby amended. No new matter has been added. Accordingly, claims 1-15 are currently pending. Reexamination and reconsideration of the pending claims are respectfully requested.

In the Office Action dated April 30, 2008, the Examiner stated that Applicants have not filed a certified copy of the 02/10008 application as required by 35 U.S.C. § 119(b). In the Response filed August 5, 2008, Applicants explained that the present application is a national phase application of PCT application No. PCT/FR2003/002456, filed August 4, 2003, which claims the benefit of French Patent Application No. 02/100008, filed August 6, 2002, and a certified copy of the 02/10008 application was filed with the International Bureau as evidenced Form PCT/IB/304. The Examiner has not acknowledged the claim for foreign priority and the receipt of the priority document. *See, Final Office Action*, Office Action Summary. Applicants respectfully request that the Examiner acknowledge the claim for foreign priority and the receipt of the priority document.

The Final Office Action rejects claims 1-5, 7, 8, and 12-15 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Application Publication No. 2002/0172850 to Asano et al. (*Asano*) in view of U.S. Patent No. 5,789,521 to Marrocco et al. (*Marrocco*). Applicants respectfully traverse the rejection.

In a recent chemical case, the Federal Circuit held that “in case[s] involving new chemical compounds, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound,” and “[t]he test for prima facie obviousness for chemical compounds is consistent with the legal principles enunciated in KSR.” *Takeda Chemical Industrial, Ltd. v. Alphapharm PTY, Ltd.*, 83 USPQ2d 1169, 492 F.3d 1350, 1356-1457, emphasis added.

Claim 1 recites, “a polymer, the skeleton of which consists of at least one phenylene repeating unit of formula (I) ...and ... at least one phenylene repeating unit of formula (II).” The Final Office Action admits that *Asano* does not disclose a phenylene repeating unit of formula II. *Final Office Action*, page 3. The Office Action then states “[i]t would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the poly-1,4-benzoylphenylene repeat unit of Marrocco, III et al. in the polymer of Asano et al., and the motivation to do so would have been as Marrocco, III, et al. suggests, to provide a greater solubility to the polyphenylene (11:5-23).” *Id.* Applicants respectfully disagree. “Phenylene polymers” is a very broad subject, and the fact that *Marrocco* and *Asano* both disclose phenylene polymers does not put them in the same field of endeavor. The polymers of *Asano* and the polymers of *Marrocco* are synthesized and used for completely different purposes. *Asano* “relates to a polymer electrolyte membrane and to a solid polymer electrolyte fuel cell using the same.” *Asano*, ¶ 0002, emphasis added. The polymers described in *Marrocco* can “be used as self-reinforced engineering plastics, can be used in combination with flexible coiled polymer binders for the preparation of high tensile strength molecular composites and can be used as matrix resins for fiber-containing composites.” *Marrocco*, column 1, lines 21-25, emphases added. The polymers disclosed in *Asano* facilitate the flow of charged particles and the production of power in a fuel cell; they have nothing to do with strengthening and/or reinforcing plastic material. In contrast, the polymers disclosed in *Marrocco* involve reinforcing and/or strengthening materials; they have nothing to do with electrical conduction, power generation or fuel cells. Stated simply, the polymers disclosed in *Asano* and the polymers disclosed in *Marrocco* serve completely different purposes and solve completely different problems.

Furthermore, *Asano* discloses that “because the sulfonated polyarylene polymers have a rigid molecular structure and consequently relatively high rigidity ... if a material of this sort is employed in the polymer electrolyte membrane of a solid polymer electrolyte fuel cell, the polymer electrolyte membrane becomes detached from the electrodes by virtue of repeated dilation, expansion and contraction due to the high temperature experienced while the fuel cell is in operation and the low temperature experienced when it is not, the result being poor adhesion.” *Asano*, ¶0021, emphasis added. *Asano* then discloses “a means of alleviating the rigidity of this linear molecular structure.” *Asano*, ¶0023, emphasis added. As cited by the Examiner, *Marrocco* discloses a means “to provide a greater solubility to the polyphenylene.” *Final Office*

Action, page 3. A means of alleviating the rigidity of linear molecular structure is completely different from a means of providing greater solubility to the polyphenylene. Therefore, one of ordinary skill in the art would have had no reason to combine the polymers disclosed in *Asano* with the polymers disclosed in *Marrocco*.

Accordingly, claim 1 is allowable over the combined teaching of *Asano* and *Marrocco*. Claims 2-5, 7, 8, and 14-15 variously depend from claim 1. They are also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-5, 7, 8, and 14-15.

The Final Office Action rejects claims 1-5, 7, 8, and 15 under 35 U.S.C. § 103(a) as being obvious over *Marrocco* in view of PCT Application Publication No. WO 01/70858 to Charnock et al. (*Charnock*). Applicants respectfully traverse the rejection.

Claim 1 recites, “a polymer, the skeleton of which consists of at least one phenylene repeating unit of formula (I) ...and ... at least one phenylene repeating unit of formula (II).” *Marrocco* does not disclose a phenylene repeating unit of formula I. Therefore, it cannot disclose a polymer consisting of both a phenylene repeating unit of formula I and a phenylene repeating unit of formula II. *Charnock* does not disclose either a phenylene repeating unit of formula I or a phenylene repeating unit of formula II. Accordingly, the combined teaching of *Marrocco* and *Charnock* fails to teach every element of at least claim 1. Claim 1, therefore, is allowable over the combined teaching of *Marrocco* and *Charnock*. Claims 2-5, 7, 8, and 15 variously depend from claim 1, and are also patentable over the combined teaching of *Marrocco* and *Charnock* for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-5, 7, 8, and 15.

The Final Office Action rejects claims 6, 9, and 10 under 35 U.S.C. § 103(a) as being obvious over *Asano* in view of *Marrocco*, and further in view of U.S. Patent No. 6,025,092 to Doyle et al. (*Doyle*). Applicants respectfully traverse the rejection.

As discussed, claim 1 is allowable over the combined teaching of *Asano* and *Marrocco*. *Doyle* fails to cure the afore-mentioned deficiencies in of *Asano* and *Marrocco*. In fact, *Doyle* is only cited for its teaching of the pendant acid. *Final Office Action*, pages 4-5. Further, *Doyle*

relates to polyethylene, which is different from phenylene recited in claim 1. Accordingly, claim 1 is allowable over the combined teaching of *Asano*, *Marrocco*, and *Doyle*. Claims 6, 9, and 10, which variously depend from claim 1, are also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 6, 9, and 10.

The Final Office Action rejects claims 1 and 11 under 35 U.S.C. § 103(a) as being obvious over Polymer Preprints, ACS 40(2): 567-568 to Bloom et al. (*Bloom*) in view of *Charnock*. Applicants respectfully note that, similar to the Office Action dated April 30, 2008, the Final Office Action only discusses the rejection of claim 11 and fails to address the rejection of claim 1. Therefore, the rejection of claims 1 and 11 appears to be flawed. Nevertheless, Applicants respectfully traverse the rejection of claims 1 and 11.

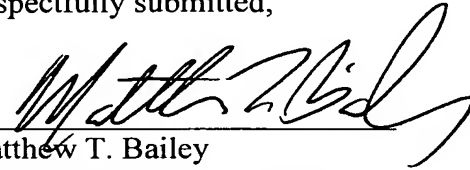
Again, claim 1 recites, “a polymer, the skeleton of which consists of at least one phenylene repeating unit of formula (I)...and ... at least one phenylene repeating unit of formula (II).” *Bloom* fails to teach or suggest at least these elements of claim 1. *Bloom* does not disclose a phenylene repeating unit of formula I. Therefore, it cannot disclose a polymer consisting of both a phenylene repeating unit of formula I and a phenylene repeating unit of formula II. *Charnock* fails to cure the deficiency in *Bloom* with respect to claim 1. *Charnock* is cited for allegedly “teaching the functional group as being on the claimed acids.” *Final Office Action*, page 5. *Charnock* does not disclose either a phenylene repeating unit of formula I or a phenylene repeating unit of formula II. Accordingly, claim 1 is allowable over the combined teaching of *Bloom* and *Charnock*. Claim 11, which depends from claim 1, is allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1 and 11.

The application is in condition for allowance. Early and favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: May 11, 2009

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